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**A CONTRIBUTION TO A KNOWLEDGE OF THE FAUNA OF THE
BLANCO BEDS OF TEXAS.**

BY EDW. D. COPE.

Prof. E. T. Dumble, State Geologist of Texas, appointed Prof. W. F. Cummins to conduct the survey of the northwestern district of the state, and in pursuance of this order the latter gentleman is now examining the mesozoic and cenozoic beds which compose and underlie the Staked Plains. I accompanied this party in the capacity of paleontologist, having already determined the vertebrate fossils collected by the Survey's expeditions of last year (see Proceedings of the American Philosophical Society, first No. for 1892).

The superficial formation of the Staked Plains has been determined by Prof. R. T. Hill to be of late cenozoic age, and the term Blanco beds has been applied to it by Prof. Cummins. The examination of the vertebrate fossils from it led me to state (*loc. cit.*) that in age the Blanco formation intervenes between the Loup Fork below and the Equus bed above, in the series. This conclusion was based chiefly on the fact of the presence of horses of the genus *Equus* (*E. simplicidens* Cope) in association with mastodons of the molar dental type of the *Tetrabelodon angustidens*, an association not previously met with in North America. In addition to these species, the presence of a peculiar land tortoise (*Testudo turgida* Cope), and of a new genus of birds allied to the rails (*Crecooides* Shuf.) was established.

I propose to present to the Academy, a list of the species obtained, so far, from the Blanco beds by the present expedition, with such conclusions as may be derived from it.

TESTUDINATA.

Testudo turgida Cope, *loc. cit.*

Testudo pertenuis, sp. nov.

Founded on a large specimen measuring three and a half feet in length by three in width, and remarkable for the transverse width of the vertebral dermal scuta. The carapace is rather flat and descends steeply posteriorly, the anal marginal bone being somewhat incurved. Margins of carapace flare outwards above the legs. The plastron has a rather wide lip, with flat base, and straight lateral borders; its anterior border is lost. The posterior lobe is deeply

and widely notched, terminating on each side in a subequilateral angular prominence. Both carapace and plastron are without sculpture, the posterior angles of the plastron only being longitudinally grooved below. The vertebral scuta are considerably wider than long, as is also the anal scutum. Both carapace and plastron are very thin, not exceeding one-quarter inch in the specimen described, except at the borders. Measurements: Length over all 4·2 feet; width over all 4 feet; width of penultimate dorsal scute 1·275 feet, length ·85 feet; width of last vertebral scute 1·35 feet; width of anal scute 1·5 feet, length ·6 feet. Length of penultimate costal scute ·9 feet; length of last costal ·95 feet. Width of lip of plastron at base ·8 feet; width of anterior lobe at axillæ 2 feet. Width of posterior lobe of plastron at base 2 feet; width at fundus of median notch 1·1 feet; width at apices of angular processes ·85 feet; depth of notch ·5 feet. This is the largest species of land tortoise yet known from North America.

EDENTATA.

Megalonyx, sp.

Teeth and fragments of skull.

CARNIVORA.

A canid and three undetermined forms represent the Carnivora.

PROBOSCIDA.

Mastodon successor, sp. nov.

This species is represented by teeth in collections previously made by Prof. Cummins, and though the characters of these resemble closely those of the *Tetralodon angustidens*, I did not identify them as pertaining to that species. From its association with the genus *Equus*, I suspected that it would prove to be distinct from the latter; and the accession of more material proves this to be the case. It is a species of the genus *Mastodon* and not of *Tetralodon*, having a very short, contracted and elephant-like symphysis. The most complete specimen is represented by both rami of the lower jaw with symphysis complete, but lacking angles and condyles; accompanied by a tusk of the upper jaw. The latter is without enamel band. The second true molars are in place, showing their patterns, and the third molars have only three crests protruded. Besides

the subsidiary tubercles which form the trefoils of the inner side of the molars there are a few other tubercles closing the valleys. The second true molars have a narrow fourth cross-crest. Measurements: Length of left ramus preserved 2.55 feet; length from anterior base of coronoid process to apex of snout 1.55 feet; length of second true molar .45 feet; width between second molars .35 feet; total width of rami at middle of M. 3-1.4 feet; width of crown of M. 3 at front crest .35 feet; diameter of tusk near middle .625 feet. This species is nearest to the *Mastodon andium* Laurill., but that species, according to Burmeister, has an elongate symphysis, although without tusks.

Mastodon efr. *mirificus* Leidy.

Rather common.

Mastodon efr. *shepardii* Leidy.

One molar obtained.

PERISSODACTYLA.

Equus simplicidens Cope, l. c.

The most abundant mammal and retaining exactly the characters of the molar teeth as originally defined.

Equus, sp.

Smaller and with plicate enamel.

Equus, sp.

Much smaller than the last, and quite rare; not determined.

ARTIODACTYLA.

Pliauchenia.

A large species about the size of the existing camel is abundant; not determined. *Pliauchenia* bones of a species larger than the last may be referable to this genus. Small Artiodactyla not determined.

Of the preceding list of fifteen species it may be remarked that *Megalonyx* and *Equus* are not Loup Fork genera, while *Mastodon* and *Pliauchenia* are such. No species is found in the Loup Fork bed. On the other hand, *Megalonyx* and *Equus* are Equus-bed genera, while *Pliauchenia* and *Mastodon* have not been found in them, although it is probable that the latter existed. No species is found in that horizon. The conclusion is inevitable that the fauna of the Blanco bed is intermediate between the two mentioned, and that it fills an

important gap in geologic and paleontologic history. It was a fauna including species of large size, the relative abundance of mastodons, camels and horses being especially noteworthy. The fact that no trace of rhinoceros has been found is remarkable.